

The zone is not well characterized.



Despite the Critical Zone's importance to terrestrial life, it remains poorly understood. Fundamental questions include:

- **How does the Critical Zone form?**
- **How does it function?**
- **How will it change in the future?**

More specifically, too little is known about how physical, chemical, and biological processes in the Critical Zone are coupled and at what spatial and temporal scales. Many of these processes are highly nonlinear and can range across scales from atomic to global, and from seconds to aeons.

Understanding the complex web of physical, chemical, and biological processes of the Critical Zone requires a systems approach across a broad array of sciences: hydrology, geology, soil science, biology, ecology, geochemistry, geomorphology, and more.